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09/777,556	02/05/2001	Richard A. Barry	SYCS-008	8971
959	7590	07/29/2004	EXAMINER	
LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109			LI, SHI K	
			ART UNIT	PAPER NUMBER
			2633	

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/777,556

Applicant(s)

BARRY ET AL.

Examiner

Shi K. Li

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings filed on 10 May 2004 are objected to as failing to comply with 37 CFR 1.84(p) because the numbers and letters of FIGs. 1, 5A, 5B are too small. Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites the limitation "a plurality of optical filters" in line 5 of the claim and "each thin-film filter" in line 6 of the claim. It is unclear whether "each thin-film filter" and "a plurality of optical filters" refer to the same set of filters or they are different sets of filters.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. Claims 1-3, 22-24, 30-32, 39 and 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Milton et al. (U.S. Patent 6,201,907 B1).

Milton et al. discloses in FIG. 1 a WDM network comprising a plurality of nodes. Milton et al. teaches in FIGs. 2 and 3 the concept of wavelengths bands and the structure of an optical node. Milton teaches in col. 5 lines 23-25 to drop and add channels from different bands.

Regarding claims 2-3, 23-24 and 31-32, Milton et al. drops and adds a fixed set of wavelengths which is predetermined and once the filter is installed, the set of wavelengths is independent of level of traffic at the node. For example, Milton et al. illustrates in FIG. 5 dropping and adding band X at node C.

6. Claims 1-4, 22-25, 30-33, 39 and 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Hutchison et al. (U.S. Patent 6,687,463 B1).

Hutchison et al. explains in FIG. 5 and col. 5, lines 45-22 the concept of wavelength bands. Hutchison et al. teaches in FIG. 9 an optical node for dropping and adding a fixed set of wavelengths from a plurality of bands. Hutchison et al. teaches to use the optical node in optical network such as those illustrated in FIGs. 4, 6 and 10.

Regarding claims 2-3, 23-24 and 31-32, Hutchison et al. drops and adds a fixed set of wavelengths which is predetermined and once the filter is installed, the set of wavelengths is independent of level of traffic at the node. For example, Hutchison et al. illustrates in FIG. 9 to drop and add the 1300 nm band and the AB band.

Regarding claims 4, 25 and 33, Hutchison et al. teaches in col. 1, lines 33-36 to provide wavelengths for future growth.

***Claim Rejections - 35 USC § 103***

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6-10 and 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milton et al. (U.S. Patent 6,084,694) in view of Farries (U.S. Patent 6,201,907 B1).

Milton et al. has been discussed above in regard to claims 1-3, 22-24, 30-32, 39 and 45. The difference between Milton et al. and the claimed invention is that Milton et al. suggests dropping a whole band of channels. Farries teaches in FIG. 7 that in certain applications only selected channels from each band need to be dropped. This gives flexibility in assigning wavelength to optical paths among a large number of nodes in a complex network. One of ordinary skill in the art would have been motivated to combine the teaching of Farries with the optical node of Milton et al. to only drop selected wavelength channels from a plurality of bands because this approach eliminates unnecessary equipment and reduce loss. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to drop only selected channels from a plurality of bands, as taught by Farries, in the optical node of Milton et al. to only drop selected wavelength channels from a plurality of bands because this eliminates unnecessary equipment and reduce loss.

Regarding claims 6 and 8, if each band consists of four channels, i.e.,  $\lambda_1$ - $\lambda_4$  constitute band A,  $\lambda_5$ - $\lambda_8$  constitute band B and  $\lambda_9$ - $\lambda_{12}$  constitute band C, Farries teaches in FIG. 7 a fixed wavelength set comprises one wavelength from each band. Farries also teaches in FIG. 7 a fixed

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wavelength set comprises a first wavelength from band B and a plurality of wavelengths from band A.

Regarding claims 7 and 9, if each band consists of 7 channels, i.e.,  $\lambda_1$ - $\lambda_7$  constitute a first band and  $\lambda_7$ - $\lambda_{14}$  constitute a second band, Farries teaches in FIG. 7 a fixed wavelength set comprises two wavelengths from each band. Farries also teaches in FIG. 7 a fix wavelength set comprises multiple wavelengths from a plurality of bands.

Regarding claim 10, it is obvious to one of ordinary skill in the art to arrange the filters of Farries in a circuit pack so that it can be installed in a rack suitable to be deployed in the field.

Regarding claim 12, if each band consists of four channels, i.e.,  $\lambda_1$ - $\lambda_4$  constitute band A,  $\lambda_5$ - $\lambda_8$  constitute band B and  $\lambda_9$ - $\lambda_{12}$  constitute band C, Farries teaches in FIG. 7 to drop  $\lambda_1$  from band A and  $\lambda_8$  from band B.

Regarding claims 13-14, if each band consists of 8 channels, i.e.,  $\lambda_1$ - $\lambda_7$  constitute a first band and  $\lambda_8$ - $\lambda_{14}$  constitute a second band, Farries teaches in FIG. 7 to drop  $\lambda_1$  and  $\lambda_4$  from the first band and drop  $\lambda_8$  and  $\lambda_{14}$  from the second band.

Regarding claim 15, the combination of Milton et al. and Farries teaches a method for dropping a fixed set of selected wavelength channels from a WDM signal using a set of cascaded thin-film filters.

Regarding claims 16-17, the combination of Milton et al. and Farries teaches drop channels and express (pass-through) channels.

Regarding claims 18-21, the combination of Milton et al. and Farries teaches that any channels can be selected from any bands by including filters with reflecting-band corresponding to the wavelengths of the channels.

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9. Claims 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milton et al. and Farries as applied to claims 6-10 and 12-21 above, and further in view of Scobey et al. (U.S. Patent 6,389,188 B1) and Canoglu et al. (U.S. Patent 6,407,838 B1).

Milton et al. and Farries have been discussed above in regard to claims 6-10 and 12-21. The difference between Milton et al. and Farries and the claimed invention is that Milton et al. and Farries do not teach to use a plurality of thin-film filters for dropping the predetermined wavelength. Scobey et al. teaches in FIG. 2 a thin-film filter 116 that is designed for selecting to drop a particular wavelength. Canoglu et al. teaches in FIG. 1 to cascade a plurality of thin-film filter to drop a plurality of selected wavelength from a WDM system. Canoglu et al. teaches to use slidable filters. However, it is obvious to one of ordinary skill in the art that if the set of wavelength to be dropped is fixed, the filters can be fixed and electromechanical apparatus for sliding the filters are unnecessary. One of ordinary skill in the art would have been motivated to combine the teaching of Scobey et al. and Canoglu et al. with the modified optical node of Milton et al. and Farries to use cascaded thin-film filters to drop selected wavelength channels from a plurality of bands because thin-film filter has low passband loss and low interchannel cross-talk. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use thin-film filters, as taught by Scobey et al. and Canoglu et al., in the modified optical node of Milton et al. and Farries because thin-film filter has low passband loss and low interchannel cross-talk.

10. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milton et al., Farries and Scobey et al. as applied to claim 11 above, and further in view of Hutchison et al. (U.S. Patent 6,687,463 B1).

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Milton et al., Farries and Scobey et al. have been discussed above in regard to claim 11 above. Regarding claim 4, the difference between Milton et al., Farries and Scobey et al. and the claimed invention is that Milton et al., Farries and Scobey et al. do not teach extra wavelengths for future growth. Hutchison et al. suggests in col. 1, line 34 that if extra-unused wavelengths are provided initially, future growth can be achieved without interruption. One of ordinary skill in the art would have been motivated to combine the teaching of Hutchison et al. with the modified optical node of Milton et al., Farries and Scobey et al. because providing extra-unused wavelength allows future growth to be achieved smoothly without interruption of service. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide extra unused wavelength channels initially, as suggested by Hutchison et al., in the modified optical node of Milton et al., Farries and Scobey et al. because providing extra unused wavelength allows future growth to be achieved smoothly without interruption of service.

Regarding claim 5, Scobey et al. teaches to use thin-film filters for dropping selected wavelength channels.

11. Claims 6-10, 12-21, 26-32, 35-38, 40-44 and 46-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milton et al. (U.S. Patent 6,084,694) in view of Nielsen et al. (U.S. Patent 6,559,988 B1).

Milton et al. has been discussed above in regard to claims 1-3, 22-24, 30-32, 39 and 45. The difference between Milton et al. and the claimed invention is that Milton et al. suggests dropping and adding a whole band of channels. Nielsen et al. teaches in FIG. 1, FIG. 2 and col. 1, lines 36-46 that in certain applications only selected channels from each band need to be dropped and added. This gives flexibility in assigning wavelength to optical paths among a large



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number of nodes in a complex network. One of ordinary skill in the art would have been motivated to combine the teaching of Nielsen et al. with the optical node of Milton et al. to only drop and add selected wavelength channels from/to a plurality of bands because this approach eliminates unnecessary equipment and reduce loss. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to drop and add only selected channels from/to a plurality of bands, as taught by Nielsen et al., in the optical node of Milton et al. to only drop and add selected wavelength channels from/to a plurality of bands because this eliminates unnecessary equipment and reduce loss.

Regarding claims 6-9, the combination of Milton et al. and Nielsen et al. teaches that any channels can be selected from any bands by including appropriate filters for the selected wavelengths.

Regarding claim 10, it is obvious to one of ordinary skill in the art to arrange the filters of Nielsen et al. in a circuit pack so that it can be installed in a rack suitable to be deployed in the field.

Regarding claim 12-14, the combination of Milton et al. and Nielsen et al. teaches that any channels can be selected from any bands by including appropriate filters for the selected wavelengths.

Regarding claim 15, the combination of Milton et al. and Nielsen et al. teaches to divide channels in a WDM system into express (pass-through) channels and drop channels, use appropriate filters to extract the selected drop channels and forward the express channel to the output fiber.

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Regarding claims 16-21, 26-32, 35-38, 40-44 and 46-51, the combination of Milton et al. and Nielsen et al. teaches that any channels can be selected from any bands by including appropriate filters for the selected wavelengths. For example, if band A consists of  $\lambda_1$ - $\lambda_4$  and band B consists of  $\lambda_5$ - $\lambda_8$ , Nielsen illustrates in FIG. 1 and FIG. 2 to drop and add two wavelengths from each band.

12. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milton et al. and Nielsen et al. as applied to claims 6-10, 12-21, 26-32, 35-38, 40-44 and 46-51 above, and further in view of Hutchison et al. (U.S. Patent 6,687,463 B1).

Milton et al. and Nielsen et al. have been discussed above in regard to claims 6-10, 12-21, 26-32, 35-38, 40-44 and 46-51. The difference between Milton et al. and Nielsen et al. and the claimed invention is that Milton et al. and Nielsen et al. do not teach extra wavelengths for future growth. Hutchison et al. suggests in col. 1, line 34 that if extra-unused wavelengths are provided initially, future growth can be achieved without interruption. One of ordinary skill in the art would have been motivated to combine the teaching of Hutchison et al. with the modified optical node of Milton et al. and Nielsen et al. because providing extra-unused wavelength allows future growth to be achieved smoothly without interruption of service. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide extra unused wavelength channels initially, as suggested by Hutchison et al., in the modified optical node of Milton et al. and Nielsen et al. because providing extra unused wavelength allows future growth to be achieved smoothly without interruption of service.

Regarding claim 34, Nielsen et al. teaches in FIG. 1 and FIG. 2 thin-film filter 120 and thin film filter 220, respectively. Milton et al. teaches in FIG. 3 receiver 14 for converting optical signals to electrical signals.

***Response to Arguments***

13. Applicant's arguments with respect to claims 1-51 have been considered but are moot in view of the new ground(s) of rejection.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 703 305-4341. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703 305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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